Claims 1, 7-9, 12, 32-37, 42, 48-50 and 52 were amended herein.

Claims 61-75 are added herein. For the convenience of the Examiner, a marked-up copy of the pending claims as amended is attached hereto as "Exhibit A."

Claims 1-9, 12, 32-37, 42-52 and 61-75 are now pending in the case.

Applicant notes for the record that all pending claims were free from rejection under 35 U. S. C. §101 and 35 U. S. C. §103.

Applicant also notes for the record that SEQ ID NO:5 has been found to be free of prior art (the Action, item 2, page 2), and that an extension of the prior art search has found that SEQ ID NOs:3-4 and 6-76 are also free of prior art (the Action, item 25, page 15).

2.2 AN AMENDED ABSTRACT HAS BEEN PROVIDED

(Re: the Action, Item 3)

The Office has objected to the Abstract as not being specifically directed to the subject matter of the present application following the Restriction Requirement now of record. In response, Applicant provides a new Abstract that particularly focuses on the subject matter of the Group III invention.

2.3 A NEW TITLE HAS BEEN PROVIDED

(Re: the Action, Item 4)

The Office has objected to the Title as not clearly indicative of the invention to which the claims are directed in view of the Restriction Requirement now of record. In response, Applicant also provides a new title that particularly indicates the subject matter of the Group III invention.

2.4 A SUBSTITUTE SPECIFICATION HAS BEEN PROVIDED

(Re: the Action, Items 5 & 7)

The Office has requested that Applicant carefully proofreads the lengthy specification to correct any possible minor errors. In response, Applicant has provided a Substitute Specification that corrects minor clerical and typographical errors in the text, and certifies that no new matter has been added as a result of correction of these minor errors.

Should the Examiner request a marked-up copy of the original Specification showing each of these changes made therein, Applicant volunteers to provide such a marked up copy in a response to a request for such, in a subsequent Action issued by the Office.

(Re: the Action, Item 6)

The Specification has also been objected to as failing to provide proper antecedent basis for the claimed subject matter, particularly with respect to language in originally filed claim 48. As such, Applicant has voluntarily amended the text of the Specification at pages 7-8, to include the language of original claim 48. In light of this amendment, Applicant requests that the objection be withdrawn.

2.5 FORMAL DRAWINGS HAVE PREVIOUSLY BEEN PROVIDED TO THE OFFICE

(Re: the Action, Item 28)

The Action, at page 16, objects to the informal figures filed with the application, and includes a PTO-948 directed to those informal drawings.

Applicant notes, however, that formal drawings have already been provided to the Office in connection with this case in a paper filed on July 25, 2001. The Action does not mention

receipt of these drawings, nor does it indicate that the formal drawings have been examined by a Draftsperson in the Office.

To that end, Applicant requests that the formal drawings previously provided be located within the office, and considered by the Draftsperson; and that if required, a new PTO-948 be issued with respect to those formal drawings, and that the PTO-948 and objection to the informal figures be withdrawn.

2.6 SUPPORT FOR THE CLAIMS

Support for each of the claims as amended herein, and the new claims added herein is provided by the Specification, drawings, and original claims as filed. Applicant certifies that no new matter has been introduced as a result of the accompanying amendment.

2.7 THE REJECTION OF CLAIMS 1-10, 32-37, 44-45, 47, AND 49-52 UNDER 35 U. S. C. § 112, 2ND PARAGRAPH, HAS BEEN OVERCOME.

(Re: the Action, Items 8-16)

Claims 1-10, 32-37, 44-45, 47, and 49-52 were rejected under 35 U.S.C. 112, 2nd paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-6 are said to be indefinite for the recitation of "about 20/30/40/50/60/70 amino acids." Claims 1-10 are said to be indefinite for the recitation of "at least a first contiguous amino acid sequence" and "at least a second contiguous amino acid sequence." Claims 32-37 are said to be indefinite for the recitation of "at least a first detectable label." Claims 44-45 are said to be indefinite for the recitation of "at least a first immunostimulant"

and "at least a first adjuvant." Claim 47 is said to be indefinite for the recitation of "at least a first immunodetection reagent."

Applicant respectfully traverses and first respectfully points out that the Action has not actually set forth any reasoning to support the rejection. The rejection is thus *prima facie* improper. Applicant further respectfully points out that the rejection is at odds with long-established examination practice and case law and is therefore unsustainable.

Applicant has studied MPEP 2173, concerning the criteria for assessing compliance with 35 U.S.C. § 112, second paragraph, and can find nothing to indicate that the present claims are indefinite by the use of terms including the phrases "about" and "at least" (such as at least a first, at least a second, *etc.*). In fact, these sections of the MPEP provide that Applicant(s) can "define in the claims what they regard as their invention essentially in whatever terms they choose so long as the terms are not used in ways that are contrary to accepted meanings in the art" (MPEP 2173.01, at page 2100-145, column 2). As the terms "at least a first", "at least a second" and such like in the claims are not used in a manner contrary to their ordinary meanings, the claims are sufficiently definite and the rejection should be withdrawn.

Moreover, Applicant points out that such language is widespread in issued U. S. patents in the same general field as that of Applicant's. The Examiner is invited to study the claims of U.S. patents 5,853,987 (see *e.g.*, claims 1-7 and 62), 3,933,430 (see *e.g.*, claim 1), and 4,981,782 (see *e.g.*, claim 1), for guidance in this area, and evidence that the use of these terms is proper and acceptable under U.S. practice.

Claim 49 is said to be indefinite for the recitation of "p33QIK or p63Krs1 peptide or polypeptide."

Without acquiescing in any way, and solely in order to expedite the prosecution of the claimed invention to allowance, Applicant has amended the claim to provide the additional clarity requested by the Examiner, and as such, believe that this rejection is overcome, and should now be withdrawn.

Claims 51-52 are said to be indefinite for the recitation of a kit comprising a peptide and at least one component for performing immunoprecipitation et al."

Without acquiescing in any way, and solely in order to expedite the prosecution of the claimed invention to allowance, claims 50-52 have been amended to more precisely define the claimed subject matter. In the case where the kit comprises one or more of the peptides of the invention, claim 52 clearly identifies the use of such kits for immunoprecipitating antibodies from a sample that are immunospecific for the novel peptides and polypeptides of the invention. In other embodiments, the peptides and polypeptides of the invention may be provided in the kit to serve as a positive control for one or more of the claimed methods.

In conclusion, Applicant now believes that all claims are free from further rejection under this section of the Statute, and respectfully requests that the rejection be withdrawn.

2.8 THE REJECTION OF CLAIMS 33-37 UNDER 35 U. S. C. §112, 1ST PARAGRAPH, HAS BEEN OVERCOME.

(Re: the Action, Items 17 and 18)

Claims 33 to 37 have been rejected under 35 U. S. C. §112, 2nd paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor was in possession of the claimed

invention when the application was filed. The Action on page 5, Item 18 says that this rejection is a "New Matter" rejection.

Applicant respectfully traverses, and first points out that this rejection cannot be properly considered a "new matter" rejection, since the literal claim language now in question was present in *originally filed* claims 32-37 (see original Specification). This language was not added by amendment in the preliminary amendment of record as alluded to by the Action; instead, the preliminary amendment of record merely conformed the subject matter of the dependent claims to that of the elected restriction group (*i.e.,* the peptides and polypeptides of the invention, and their compositions and uses). Original claim 32 clearly defines a genus of peptide, polypeptides, antibodies, and antigen binding fragments of the invention that may further comprise at least a first detection label. Therefore, claims 33-37, drawn to particular species of that genus (*i.e.,* peptides and polypeptides), are *clearly* properly dependent, and are *clearly not* "new matter." Inasmuch as the Examiner may be actually requesting identification of additional support for the methods and kits involving such labeled peptides and polypeptides, Applicant notes that the Specification clearly at least on page 8, 2nd paragraph, describes immunodetection methods and kits that utilize labeled antibodies, antigen binding fragments, polypeptides or peptides. That the present restriction has been imposed limiting the scope of the claims to peptides and polypeptide compositions and their uses, claims 33-37 as pending are clearly supported by the originally filed specification and original claims 32-37. Therefore, Applicant requests that this rejection be withdrawn.

2.9 THE REJECTION OF CLAIMS 1-8, 10-11, 32-37, AND 42-52 UNDER 35 U. S. C. §112, 1ST PARAGRAPH, HAS BEEN OVERCOME.

(Re: the Action, Item 19)

Claims 1-8, 10-11, 32-37 and 42-52 have been rejected under 35 U. S. C. §112, 1st paragraph, for allegedly containing subject matter which was not described in the specification in such as way as to enable one of skill in the art to make and/or use the invention.

The Action contends that the Specification "while being enabling for a polypeptide comprising SEQ ID NO:2, a peptide consisting of residues 1-322 of SEQ ID NO:2, and peptides consisting of SEQ ID NOs:3-76," does not reasonably provide enablement for any peptide/polypeptide comprising residues 1-322 of SEQ ID NO:2, or any peptide/polypeptide from 9 to about 20/30/40/50/60/70 amino acids in length comprising at least a first contiguous sequence" according to any one of SEQ ID NO:3-76.

On one hand, the Action admits that "Applicant has taught how to make and use SEQ ID NO:s:2-76 and residues 1-322 of SEQ ID NO:2 to generate antibodies which bind to native p33 to serve as diagnostic markers of therapeutic efficacy of cancer treatments" (Action, page 11, 3rd paragraph).

On the other hand, the Action states in the paragraph that follows: "Applicant has not provided any working examples of peptides of p33 or antibodies generated against said peptides which are therapeutic with respect to cancer treatment" (Action, page 11, 4th paragraph).

Applicant respectfully traverses.

The Action appears, in essence, through advancement of a rejection under this section of the statute, to be requiring the specific disclosure of *in vivo* working examples in the Specification that demonstrates use of each of the claimed peptide and polypeptide compositions in various *in vivo*

therapeutic regimens. Such a rejection is clearly improper. It is well known accepted that Applicant needs not demonstrate every possible working embodiment of the invention. Likewise, not every single species that may be encompassed within a generic method need be described or demonstrated. The Action appears to confuse the presence of a working example with objective teaching in the Specification. Clearly, this is an improper standard that is not supported by the case law. Likewise, the pending claims do not recite any limitation about their use in

In fact, rather than requiring the presence of a working example demonstrating effectiveness for each species within a claimed invention, as apparently required by the instant Action, it is well established that the Specification does not even have to include any working examples. Section 2165.01 of the MPEP states this with particular clarity at page 2100-122:

> There is no statutory requirement for the disclosure of a specific example. A patent Specification is not intended nor required to be a production Specification. *In re Gay*, 309 F.2d 768, 135 USPQ 311 (C.C.P.A. 1962).

All that is required to comply with § 112, 1st paragraph is for the Specification to teach how to make and use the claimed invention so that it may be practiced without undue experimentation (*In re Borkowski and Van Venrooy*, 164 USPQ 642 [C.C.P.A. 1970]). Clearly, the Specification meets this requirement, as it illustrates the materials, methods, and even experimental protocols that may be used to achieve the claimed invention. The requirements for "how to make" and "how to use" have obviously been satisfied in the instant application.

The Examiner is reminded that in assessing the question of whether undue experimentation would be required in order to practice the claimed invention, the key term is "undue," not "experimentation." *In re Angstadt and Griffin*, 190 USPQ 214 (C.C.P.A. 1976). The need for *some* experimentation does not render the claimed invention unpatentable under 35 U. S. C. § 112, 1st paragraph. The MPEP and established case law also support Applicant's position on

experimentation. MPEP 2164.01 cites *M.I.T. v. A.B. Fortia*, 227 USPQ 428, for the proposition that even if experimentation is complex, this does not necessarily make it undue, if the art typically engages in such experimentation. The guidance from the courts is further embodied in the MPEP at 2164.04, where it is stated that if this [examination] procedure is not followed, there would be no need for the Applicant to go to the trouble and expense of supporting his presumptively accurate disclosure. Indeed, a considerable amount of experimentation may be permissible if such experimentation is routinely practiced in the art. *In re Angstadt and Griffin, supra*; *Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd.*, 18 USPQ 2d 1016 (Fed. Cir. 1991).

It is clear from the abundance of U. S. patents cited *supra* that the objective teachings of the present Specification clearly satisfies the "make and use" requirement of the statute, by providing specific examples of a variety of peptides and polypeptides that comprise one or more amino acid sequences disclosed in the Specification.

Applicant also submits that the Specification clearly provides the objective enablement required by § 112, 1st paragraph. It has been established that the Specification must be taken as in compliance with the enabling requirement of the 1st paragraph of § 112 unless there is reason to doubt the objective truth of the statements contained therein. *In re Marzocchi and Horton*, 169 USPQ 367 (CCPA 1971). Therefore, in light of the foregoing information, Applicant submits that the present rejection has been overcome and respectfully requests withdrawal of the rejection.

2.10 THE REJECTION OF CLAIMS 1-8, 10-11, 32-37, AND 42-52 UNDER 35 U. S. C. §112, 1ST PARAGRAPH, HAS BEEN OVERCOME.

(Re: the Action, Item 20)

Claims 1-8, 10-11, 32-37 and 42-52 have been rejected under 35 U. S. C. §112, 1st paragraph, for allegedly containing subject matter which was not described in the

specification in such as way as to reasonably convey to one of skill in the art that the inventor at the time the application was filed, had possession of the claimed invention.

Specifically, the Action at page 12 states that:

> "Applicant is in possession of a polypeptide comprising SEQ ID NO:2, a peptide consisting of residues 1-322 of SEQ ID NO:2, and peptides consisting of SEQ ID NOs:3-76, said SEQ ID NO:2/peptides *(sic)* in a pharmaceutically acceptable excipient to be used to generate antibodies which recognize non-human p33 to diagnose the therapeutic effectiveness of cancer treatments; and wherein the immune complexes (said peptides/polypeptide—antibody) can be detected indirectly with another labeled antibody; a kit comprising said peptides" *(sic)*.

The Action further takes the position at page 12, 3rd paragraph, that:

> "Applicant is not in possession of any peptide/polypeptide comprising residues 1-322 of SEQ ID NO:2, any peptide/polypeptide from 9 to about 20/30/40/50/60/70 amino acids in length comprising at least a first contiguous amino acid sequence according to any one of SEQ ID NOs:3-76, and/or at least a second contiguous amino acid sequence according to any one of SEQ ID NOs:3-76, any other labeled peptide/polypeptide thereof for detection, diagnostic, or therapeutic purposes, any nucleic acid encoding said peptides/polypeptide, or any antibody to said peptide/polypeptide in a pharmaceutically acceptable excipient to be used for in vivo therapy of any disease, or for diagnosis of the therapeutic effectiveness of any disease other than cancer."

Applicant respectfully traverses and is utterly perplexed by these statements.

First, Applicant cannot understand how the Office believes that Applicant *is* in possession of "a polypeptide comprising SEQ ID NO:2, a peptide consisting of residues 1-322 of SEQ ID NO:2, and peptides consisting of SEQ ID NOs:3-76," but is *not* in possession of "any peptide/polypeptide comprising residues 1-322 of SEQ ID NO:2, any peptide/polypeptide from 9 to about 20/30/40/50/60/70 amino acids in length comprising at least a first contiguous amino acid sequence according to any one of SEQ ID NOs:3-76, and/or at least a second contiguous amino acid sequence according to any one of SEQ ID NOs:3-76."

The Specification at pages 3 bridging page 4, clearly and succinctly indicates that one aspect of the invention involves compositions "that comprises at least a first isolated peptide of from 9 to about 80 amino acids in length, or at least a first nucleic acid segment that encodes such a peptide, wherein the peptide comprises, consists essentially of, or consists of a first contiguous amino acid sequence according to any one of SEQ ID NO:3 through SEQ ID NO:76. Particularly preferred compositions include those peptides that comprise, consist essentially of, or consist of, the amino acid sequence of SEQ ID NO:3 or SEQ ID NO:4.

Furthermore, the specification provides an exhaustive and detailed teaching from pages 5 to 17 that extensively describes particular aspects of the invention including how to make and use various polypeptides, peptides, antibodies, antigen binding fragments, epitopic peptides, and the like in a variety of diagnostic and therapeutic regiments.

Applicant invites the Examiner to study pages 9 to 20 of the Specification where a lengthy teaching is made not only as to the preferred sizes of the disclosed peptides and polypeptides, but also to their preferred primary sequences, as evidenced by a 27-page sequence listing that specifies particularly preferred peptides, which, Applicant notes, have been found to be free of the prior art by the Office (Action, page 15).

Likewise, the Specification, at pages 21-24, painstakingly details the use of the novel peptides, polypeptides, antibodies, and antigen binding fragments of the invention (as well as nucleic acid compositions that encode them) in a variety of diagnostic regimens including ELISA, immunoprecipitation, dot blotting, and such like.

Pages 36-40 of the Specification detail the use of these peptide compositions in a variety of diagnostic and therapeutic methodologies, including the production of large quantities of antibodies and antigen binding fragments specific for the disclosed peptides and polypeptide.

Pages 40-44 of the Specification detail the use of nucleic acid compositions that encode these illustrative peptides and polypeptides in a variety of recombinant methodologies, including production of large quantities of these peptides using host cells transformed with such constructs.

Pages 51-53 of the Specification detail the use of the disclosed peptide, polypeptide, antibody, antigen binding fragment, and nucleic acid compositions that encode them in a variety of diagnostic and therapeutic kits, including for example immunological detection kits and assays.

In view of the lengthy and detailed teaching of the Specification, Applicant believes that the both the enablement and written description requirements for how to make and use the disclosed peptides and polypeptides as encompassed by the pending claims are *clearly* and *unambiguously* free from any rejection under this section of the Statute, and respectfully requests that the outstanding rejection be withdrawn.

2.11 THE FAILURE TO GRANT PRIORITY TO THE PROVISIONAL APPLICATION IS IMPROPER.

(Re: the Action, Item 21)

The Action states that "the claims will be examined according to thte filing date of the instant application," since the provisional priority application allegedly does not provide support for various literal claim language found in the instant claims.

Applicant is perplexed by position that the Office has apparently taken, and respectfully traverses.

Applicant respectfully points out that the written description requirement is not so stringent as to require an exact one-to-one literal correspondence ("at least a first" or "a polypeptide comprising, consisting essentially of, or consisting of") between the language of an original provisional patent specification and claims later advanced in a non-provisional application that claims priority to the earlier document:

"The function of the description requirement is to ensure that the inventor had possession (as of the filing date of the application relied on) of the specific subject matter latter claimed by him; how the specification accomplishes this is not material. It is not necessary that the application describe the claim limitations exactly, but only so clearly that persons of ordinary skill in the art will recognize from the disclosure that the appellants invented processes including those limitations."

In re Wertheim, 191 USPQ 90 (C.C.P.A. 1976); emphasis added.

The priority application clearly encompasses $p33^{QIK}$ or $p63^{Krs1}$ polypeptides and peptides and epitopes derived therefrom, as well as antibodies and antigen binding fragments specific therefor. In fact, the provisional application even provides literal written description for the sequences presently encompassed by SEQ ID NO:3-SEQ ID NO:76 (See provisional application's sequence listing), and thus provides the written description and enabling teaching required to support the present application.

Denying priority to the provisional application solely on the basis of the fact that the earlier document allegedly provides literal written description for compositions that "comprise" but does not literally disclose compositions that "consist of" or "consist essentially of" a particular claim element is without foundation, and cannot be permitted to stand.

Applicant notes that case law has already addressed this issue—the CCPA found that it is unnecessary for the claimed subject matter to be described in *ipis verbis* to satisfy the written description requirement of § 112. *In re Ruschig*, 154 USPQ 118 (C.C.P.A. 1967); *In re Lukach*, 169 USPQ 795 (C.C.P.A. 1971).

Applicant believes that all claims are supported by not only the disclosures of the pending application, but also by the priority non-provisional application and further believes that all claims are entitled to the effective filing date of the priority application, *i.e.*, 31 March 2000.

2.12 THE REJECTION OF CLAIM 11 UNDER 35 U. S. C. §102(B) HAS BEEN OVERCOME.

(Re: the Action, Items 22-24)

Claim 11 has been rejected under 35 U. S. C. §102(b), allegedly as being anticipated by Taylor* et al. (Proc. Natl. Acad. Sci. USA, *1996, 93:10099-10104) and Creasy* et al. (Gene, *1995, 167:303-306).

Applicant respectfully traverses; however, since claim 11 has been cancelled herein without prejudice and without disclaimer, the rejection of the claim is rendered moot.

Applicant therefore requests that the rejection be withdrawn.

2.13 THE CLAIMS DISTINGUISH OVER THE PRIOR ART

The present invention is clearly distinguished over the cited references. The independent claims, and the claims which depend therefrom, provide novel, non-obvious, and useful peptide and polypeptide compositions and kits comprising them that comprise an amino acid sequence as disclosed in the sequence listing provided in the application.

There is no suggestion or enablement in either of the cited references for making or using the peptides, compositions, or kits of the claimed invention. Likewise, there is certainly no suggestion or teaching in the cited references for preparing peptides and polypeptides that comprise, consist essentially of, or consist of the peptides disclosed in SEQ ID NO:3-76. For these and the reasons set forth above, Applicant believes that the claimed invention is distinguished over the cited art, and that the case is in condition for allowance.

2.14 REQUEST FOR EXAMINER INTERVIEW

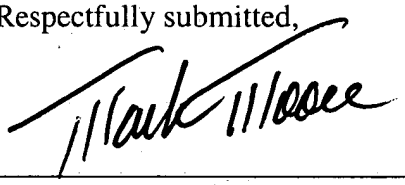
Owing to the many perplexing statements in the present Action, and the significant contradiction of many seemingly well-established rules of the Office, pursuant to M. P. E. P. § 713.01 and 37 C. F. R. §1.133, Applicant hereby formally requests the scheduling

of an Interview with the Examiner-in-Charge, the Examiner's Supervisory Patent Examiner, and Applicant's undersigned representative to discuss the claims as are now in condition for allowance, and to address any particular remaining issues in the mind of Examiner Jamroz once she has had the opportunity to review this response. In order to facilitate a cost-savings and expeditious conclusion of the prosecution on the merits, Applicant's undersigned representative will telephone Examiner Jamroz to arrange such interview within the next 30 days.

2.15 SUMMARY

In conclusion, in light of the foregoing remarks, Applicant believes that the concerns set forth in the Action have now been overcome and that all pending claims are in condition for immediate allowance. Such favorable action is respectfully requested. Should the Examiner have any questions concerning the accompanying amendment, response and related papers, a telephone call to the undersigned Applicant's representative would be appreciated.

Respectfully submitted,



Date: July 8, 2002

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